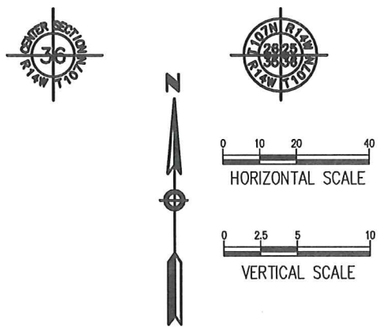
CONVENTIONAL SIGNS AND ABBREVIATIONS

CORPORATE LIMITS		ACRE	A.
SECTION LINE		ADJUST	ADJ.
RIGHT OF WAY LINE (STATE)		AGGREGATE	AGG.
PROPERTY LINE (STREET)		APPROACH	APP.
ADDITION LINE		BENCH MARK	B.M.
SURVEY LINE	1 2	BITUMINOUS	BIT.
CENTER LINE		BRIDGE	BR.
WIRE FENCE		BUILDING	BLDG.
STONE WALL OR FENCE		CAST IRON PIPE	C.I.P.
HEDGE		CATCH BASIN	C.B.
GUARD RAIL		CENTER LINE	℄
CREEK OR RIVER		CENTER TO CENTER	C TO C
DRY RUN		CLAY SEWER PIPE	C.S.P.
RAILROAD		CONCRETE	CONC.
RAILROAD RIGHT OF WAY LINE		CONSTRUCT	CONST.
CURB & GUTTER INP.		CORNER	COR.
SIDEWALK INP.		CORRUGATED METAL PIPE	C.M.P.
SANITARY SEWER INP.		CORRUGATED METAL PIPE ARCH	C.M.P.-A
STORM SEWER INP.		CRUSHED ROCK	CR. RK.
WATERMAIN, GATEVALVE & BOX INP.		CURB & GUTTER	C & G
ELECTRIC UNDERGROUND INP.	E	DEFLECTION LEFT	D L
TELEPHONE UNDERGROUND INP.	T	DEFLECTION RIGHT	D R
STEAM MAIN INP.	S	DEGREE OF CURVE	D
GAS MAIN INP.		DELTA OR INTERSECTION ANGLE	Δ
CURB INP.		DRIVE	DR.
HYDRANT INP.		DRIVEWAY	DRWY.
TELEPHONE, POWER POLES		DROP INLET	D.I.
LIGHT POLES		DUCTILE IRON PIPE	D.I.P.
TRAFFIC SIGNAL		EAST	E.
FIRE ALARM BOX		ELEVATION	EL.
RAILROAD CROSSING SIGN	RXR	EMBANKMENT	EMB.
RAILROAD CROSSING BELL		ENTRANCE	ENT.
TREE		EQUATION	EQ.
STUMP		ESTIMATE	EST.
BUILDING		EXCAVATION	EXC.
IRON PIPE		EXPANSION	EXP.
STONE MONUMENT		FLOW LINE	F.L.
MANHOLE INP.		FOOT	FT.
BRICK INP.		FOUNDATION	FD'N.
BRIDGE INP.		FRAME	FR.
CULVERT INP.		FURNISH AND INSTALL	F. & I.
CATCH BASIN INP.		GALLON	GAL.
CURB & GUTTER CONST.		GATEVALVE	GV
SIDEWALK CONST.		GRATE	GR.
SANITARY, STORM SEWER CONST.		HIGH WATER	H.W.
WATERMAIN CONST.		HIGHWAY	HWY.
MANHOLE CONST.		HORIZONTAL	HORIZ.
CATCH BASIN CONST.		HYDRANT	HYD.
HYDRANT CONST.		INLET	INL.
CROSS		INPLACE	INPL.
TEE		INSTALL	INST.
TAPPING MACHINE SLEEVE & VALVE		INVERT	INV.
BEND, ELBOW		IRON PIPE	I. P.
INCREASER, DECREASER		JUNCTION	JCT.
CONCRETE		LEFT	LT.
SAND		LENGTH OF CURVE	L.
CRUSHED ROCK		LINEAL	LIN.
BITUMINOUS		LOW WATER	L.W.
CLEAR & GRUB TREE		MANHOLE	M.H.
SW, C&G, CONC BASE, DRWY-REMOVE<GRD & ALIGN>		MINIMUM	MIN.
SW, C&G, CONC BASE, DRWY-REMOVE<CONDEMED SW>		MISCELLANEOUS	MISC.
SOIL BORING LOCATION NO.2		MONUMENT	MON.
		NORTH	N.
		NORTH EAST	N.E.
		NORTH WEST	N.W.
		NUMBER	NO.
		OUTLET	OUTL.
		PERFORATED	PERF.
		POINT OF CURVATURE	P.C.
		POINT OF INTERSECTION	P.I.
		POINT OF TANGENCY	P.T.
		POINT ON TANGENT	P.O.T.
		RADIUS, ROCK, RANGE	R.
		RAILROAD	R.R.
		REINFORCED	REINF.
		REINFORCED CONCRETE PIPE	R.C.P.
		RETURN	RET.
		RIGHT	RT.
		SANITARY	SAN.
		SEWER	SEW.
		SIDEWALK, SOUTH WEST	S.W.
		SOUTH	S.
		SOUTH EAST	S.E.
		SPECIFICATION, SPECIAL	SPEC.
		STANDARD	STD.
		STATION	STA.
		STORM, STATE, STUCCO	ST.
		STREET, STONE, STEEL	ST.
		SUBDRAIN	SD,SUBD
		SURFACE	SURF.
		TANGENT	TAN.
		TURNING POINT, TELEPHONE POLE	T.P.
		VARIABLE	VAR.
		VEHICULAR MEASURE	V.M.
		VERTICAL	VERT.
		VERTICAL CURVE	V.C.
		VETRIFIED	VIT.
		WEST, WATER	W.

NOTE: SECTION NUMBERS READ FROM SOUTH



MINNESOTA DEPARTMENT OF TRANSPORTATION

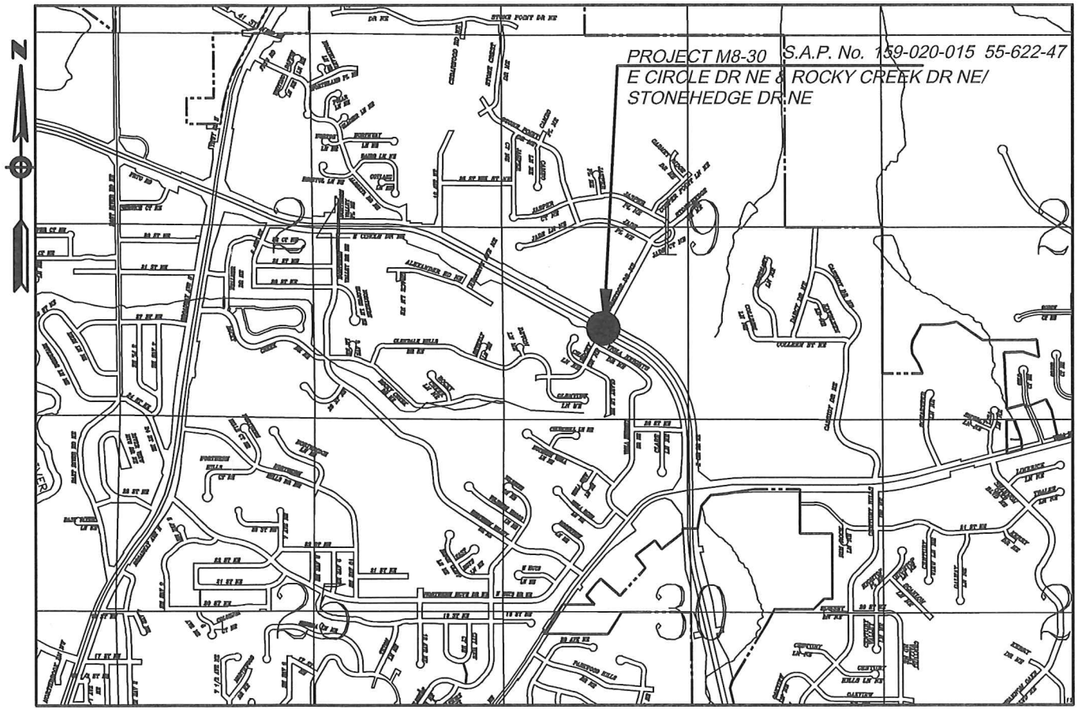
City of Rochester, Minnesota

Department Of Public Works

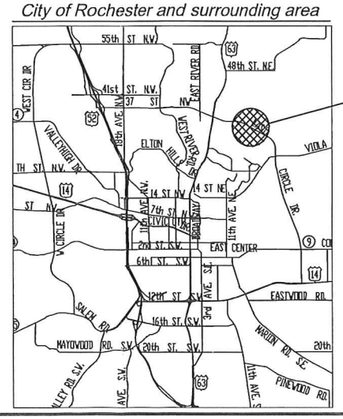
TRAFFIC CONTROL SIGNAL SYSTEM AT EAST CICRLE DR. NE
AND ROCKY CREEK NE / STONEHEDGE DR NE

TOWNSHIP 107 **RANGE** 13 **SECTION** 19

GROSS LENGTH	N/A	FEET	N/A	MILES
BRIDGE LENGTH	N/A	FEET	N/A	MILES
EXCEPTION LENGTH	N/A	FEET	N/A	MILES
NET LENGTH	N/A	FEET	N/A	MILES



City of Rochester and surrounding area



APPROXIMATE PROJECT LOCATION

LEGAL DESCRIPTION:

PROJECT LOCATION

OLMSTED COUNTY

ROCHESTER DISTRICT

GOVERNING SPECIFICATIONS

State of Minnesota
The 2005 edition of the Minnesota Department of Transportation "Standard Specifications for Construction" shall govern except as modified by special provision.

UTILITY QUALITY LEVEL

The subsurface utility information in this plan is utility quality level D. This quality level was determined according to the guidelines of CI/ASCE 38-2, entitled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data."

DESIGN DESIGNATION

		CSAH 22	Stonehedge Drive NE
ADT (Current Year)	2012	13,760	5,480
ADT (Future Year)	2032	19,260	7,670
HCADT (Future Year)	2032	5.9%	5.9%
SIGMA N18 (20)		1,447,000	576,000
FUNCTIONAL CLASSIFICATION		Arterial	Collector
NO. & WIDTH OF TRAFFIC LANES		4 @ 12 FT	2 @ 12 FT
NO. & WIDTH OF SHLDR		2 @ 10 FT	
DESIGN SPEED		55 MPH	30 MPH
BASED ON SIGHT DIST		STOPPING	
HEIGHT OF EYE		3.5 FT	3.5 FT
HEIGHT OF OBJECT		2.0 FT	2.0 FT
STOP CONDITION AT:			

DESIGN SPEED NOT ACHIEVED AT:
STA. TO . STA. MPH

INDEX TO PLANS

Sheet Title	Sht. No.
TITLE SHEET	1
ESTIMATED QUANTITIES	2
DETAILS	2
GRADING	3
STRIPING	3
SIGNAL PLANS	4-9
INTERCONNECT	10

This plan contains 10 Total sheets

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Room 108 - City Hall
Rochester, MN 55904
Phone: (507) 328-2400
Fax: (507) 328-2401

Calvin Fahn , Design Technician — Date 3-29-12

Russell Kelm, Design Engineer: I hereby certify that this plan was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Date: 3-29-12 Registration Number 21107

Approved: Douglas Nelson, Asstst. City of Rochester Engineer — Date 3/29/12

Approved: Richard Freese, City of Rochester Engineer — Date 3/29/12

Approved: Michael Sheehan, County Engineer — Date 3/29/12

District State Aid Engineer: Reviewed for Compliance with State Aid Rules/Policy — Date 04/03/12

State Aid Engineer: Approved for State Aid Funding — Date 04/03/12

S.A.P. No. 159-020-015 55-622-47
Project No M8-30 J 6010
Sheet 1 of 10 Sheets

STATEMENT OF ESTIMATED QUANTITIES

NOTE	SPEC. REF. NUMBER	ITEM DESCRIPTION	UNIT	PARTICIPATING SP 159-020-15	NON-PARTICIPATING	STORM SEWER	TOTAL ESTIMATED QUANTITY
	1 STREET (350)						
	2021.501/00010	MOBILIZATION	LS	1.00			1.00
	2104.501/00022	REMOVE CURB AND GUTTER	L F	7.00			7.00
	2104.505/00120	REMOVE BITUMINOUS PAVEMENT (P)	S Y	587.00			587.00
	2104.513/00011	SAWING BIT PAVEMENT (FULL DEPTH)	L F	360.00			360.00
	2105.525/00010	TOPSOIL BORROW (LV) (P)	C Y	38.00			38.00
3	2211.501/00020	AGGREGATE BASE CLASS 2	TON	65.00			65.00
	2221.501/00050	AGGREGATE BASE CLASS 5	TON	379.00			379.00
2	2360.501/12200	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON	16.00			16.00
6	2531.501/02120	CONCRETE CURB & GUTTER DESIGN B424	L F	181.00			181.00
	2531.501/02320	CONCRETE CURB & GUTTER DESIGN B624	L F	33.00			33.00
	2531.501/04110	CONCRETE CURB & GUTTER DESIGN D412	L F	25.00			25.00
	2563.601/00010	TRAFFIC CONTROL	LS	1.00			1.00
	2573.512/00012	TEMPORARY DITCH CHECK TYPE 2	L F	20.00			20.00
	2573.530/00010	STORM DRAIN INLET PROTECTION	EACH	1.00			1.00
	2575.505/00030	SODDING TYPE LAWN	S Y	369.00			369.00
	2582.502/51106	6" SOLID LINE WHITE-EPOXY (GROUND IN)	L F	253.00			253.00
	2582.502/51112	12" SOLID LINE WHITE-EPOXY (GROUND IN)	L F	201.00			201.00
	2582.502/51124	24" SOLID LINE WHITE-EPOXY (GROUND IN)	L F	112.00			112.00
	2 PED FACILITIES (550)						
	2104.503/00020	REMOVE CONCRETE SIDEWALK	S F	13.00			13.00
	2521.501/00050	5" CONCRETE WALK	S F	403.00			403.00
4	2521.501/00060	6" CONCRETE WALK	S F	697.00			697.00
	2521.603/00010	SAWING CONCRETE WALK	L F	10.00			10.00
	2531.618/00010	TRUNCATED DOMES	S F	106.00			106.00
	3 STORM SEWER (450)						
	2104.523/00100	SALVAGE CONCRETE APRON	EACH			2.00	2.00
	2501.511/90155	15" RC PIPE CULVERT CLASS V	L F			60.00	60.00
	2501.573/00012	INSTALL CONCRETE APRON	EACH			2.00	2.00
	2503.511/90125	12" RC PIPE SEWER CLASS V	L F			20.00	20.00
	2503.602/00042	CONNECT INTO EXISTING STORM SEWER	EACH			2.00	2.00
5	2506.502/00301	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH			3.00	3.00
	2506.602/00019	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH			1.00	1.00
	4 TRAFFIC (650)						
	2550.512/00010	HANDHOLE	EACH	1.00			1.00
	2550.523/00078	2" NON-METALLIC	L F	5,460.00			5,460.00
	2565.511/00010	TRAFFIC CONTROL SIGNAL SYSTEM	SIGS	1.00			1.00

ESTIMATED QUNATITIES NOTES:

(1) PLANNED QUANTITY
(2) BITUMINOUS MATERIAL FOR TACKCOAT INCIDENTAL
(3) INCLUDES AS A TOKEN AMOUNT NOT SUBJECT TO THE PROVISIONS OF 1903
(4) TO BE USED IN AREAS WHERE SIDEWALK ABUTS CURB AND GUTTER
(5) SEE CITY OF ROCHESTER STANDARD DETAIL PLATE 1-01
(6) INCLUDES TRANSITION CURB

STANDARD DETAIL PLATES	
CITY OF ROCHESTER	
NO.	**DETAIL PLATE**
1-01	STRUCTURE TYPE 1
2-01	CONCRETE CURB & GUTTER
2-06	CURB & GUTTER REINFORCEMENT AT CATCH BASINS
2-13	PEDESTRIAN CURB RAMP
3-02	TYPICAL SECTION OFF-ROAD BIKEWAY

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT	
STATE OF MINNESOTA	
NO.	**DETAIL PLATE**
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3145F	CONCRETE PIPE TIES
8000I	STANDARD BARRICADES
8114A	P.V.C. HANDHOLE/PULLBOX (NO VEHICLE LOAD) (2 SHEETS)
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118D	SERVICE EQUIPMENT & POLE TRAFFIC CONTROL SIGNALS
8119C	GROUND MOUNTED CABINET FOUNDATION
8121F	TRANSFORMER BASE AND POLE BASE PLATE (PA85M, PA90 AND PA100) (2 SHEETS)
8123F	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
8124E	
8126I	POLE FOUNDATION (PA90 AND PA100)
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

Revision comment: –
Revised: –

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Date: 3-29-12 Reg. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2400
FAX: (507) 328-2401

Title: ESTIMATED QUANTITIES AND DETAIL PLATES FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 2 of 10 Sheets

P:\PROJECTS\J-PROJ\J6010\Design\Dwgs\6010QD2.dwg, Layout1, 3/29/2012 1:25:01 PM, 1:2

BORING # 3	Intersection of E Circle Dr and Stonehedge Dr NE NW quadrant - bored 3' east of signal base site
0 – 12'	Soil
12' – 14.5'	Weathered Limestone
	Limestone Refusal at 14.5'
	END BORING

BORING # 4	Intersection of E Circle Dr and Stonehedge Dr NE NE quadrant - bored 3' northwest of signal base site
0 – 3'	Soil
	Limestone Refusal at 3'
	END BORING

CONSTRUCTION AND SOILS NOTES

1) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2005 Mn/DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION INCLUDING APPLICABLE SUPPLEMENTAL SPECIFICATIONS.

2) ALL USES OF THE WORD INCIDENTAL IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

3) ANY DEWATERING REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE CONSIDERED INCIDENTAL.

4) EMBANKMENT MATERIAL SHALL BE SELECT GRADING MATERIAL UNLESS SPECIFIED OTHERWISE. SELECT GRADING MATERIAL SHALL CONSIST OF ALL MATERIALS ENCOUNTERED EXCEPT TOPSOIL, ORGANIC SOIL, SILT, NON-SOIL DEBRIS, OR ANY OTHER UNSUITABLE MATERIAL. THE EMBANKMENT MUST BE CONSTRUCTED IN ACCORDANCE WITH Mn/DOT SPECIFICATION 2105.

5) THE UTILITIES SHOWN IN THE PLAN ARE PLOTTED USING THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS BEFORE COMMENCING CONSTRUCTION BY CALLING GOPHER STATE ONE CALL.

6) THE FOLLOWING COMPACTION REQUIREMENTS SHALL BE USED:

EMBANKMENT	QUALITY COMPACTION
CLASS 2 AGGREGATE BASE	QUALITY COMPACTION
CLASS 5 AGGREGATE BASE	QUALITY COMPACTION

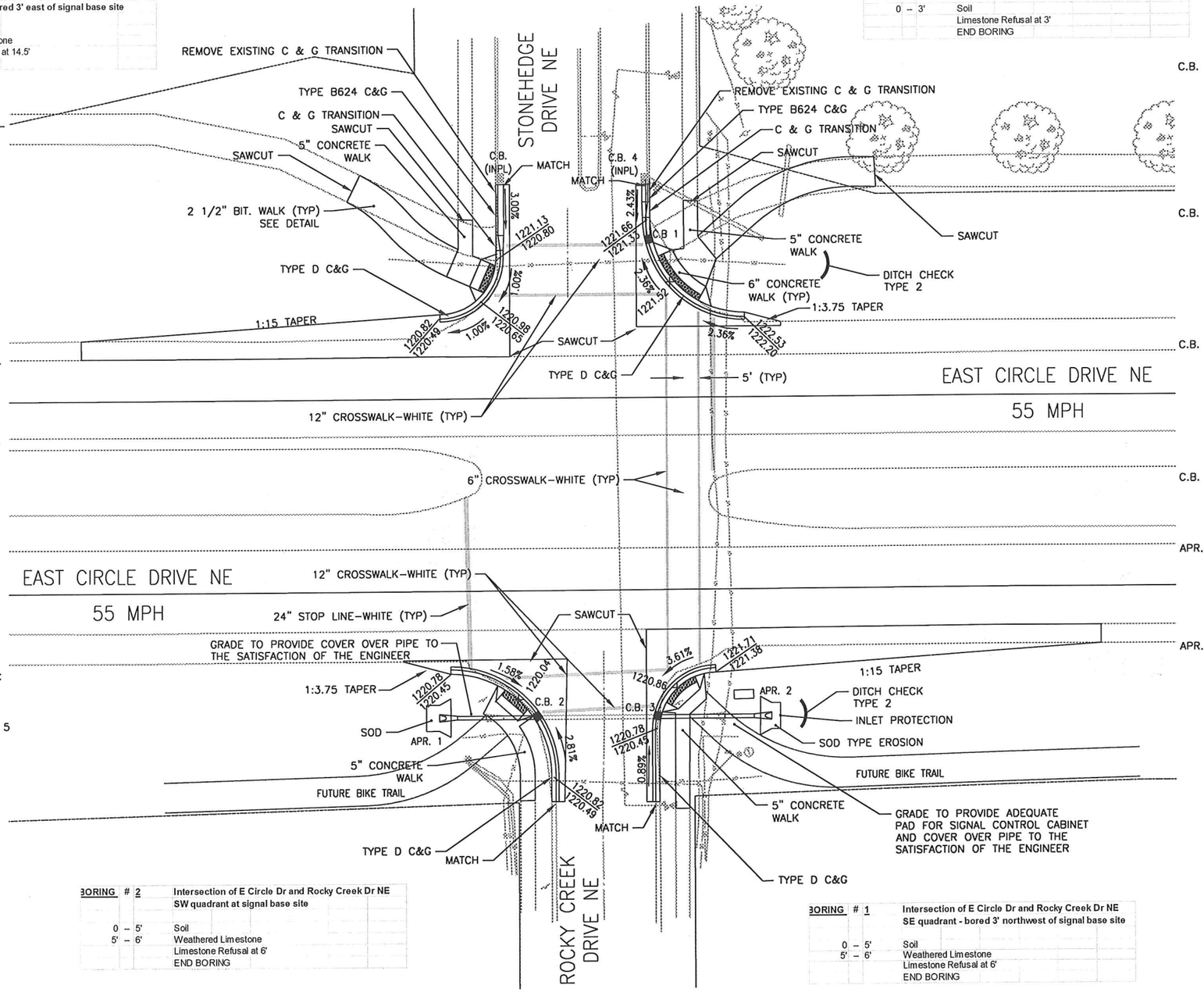
7) ANY TRAFFIC SIGNS NOT REMOVED OR RELOCATED BY THE CITY PRIOR TO CONSTRUCTION SHALL REMAIN IN PLACE AND BE PROTECTED BY THE CONTRACTOR FOR THE DURATION OF THE WORK, EXCEPT AS OTHERWISE AUTHORIZED BY THE ENGINEER IN ACCORDANCE WITH Mn/DOT SPECIFICATION 1710.6.

8) ALL WORK TO BE PER CITY OF ROCHESTER STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR TO OBTAIN ALL UTILITY CONNECTION PERMITS FROM THE CITY PUBLIC WORKS.

9) ROADWAY TYPICAL SECTION: 6" MVWE35035B
12" AGGREGATE BASE CLASS 5

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDLINES OF CI/ASCE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.

PED RAMP NOTE:
PER THE 2007 MINNESOTA STATE ACCESSIBILITY CODE SECTION 406.7, EXCEPTION:
WHERE THERE IS NO LANDING AT THE TOP OF CURB RAMPS, CURB RAMP FLARES SHALL BE PROVIDED AND SHALL NOT BE STEEPER THAN 1:12.



C.B. 1
N 180578.49
E 627115.15
CONSTRUCT STRUCTURE TYPE 1
F&I CASTING TYPE A
T/C EL. = 1221.48
GRATE EL. = 1220.98
OUTL. EL. = 1217.37 TO C.B. 4(INPL)
CONNECT TO EX. DRAINAGE STRUCTURE
F&I 20.0 L.F. 12" CL. 5 R.C.P.
ST. S. @ 1.00%

C.B. 2
N 180455.36
E 627004.87
CONSTRUCT STRUCTURE TYPE 1
F&I CASTING TYPE A
T/C EL. = 1220.24
GRATE EL. = 1219.74
INL. EL. = 1216.78 FROM C.B. 3
OUTL. EL. = 1216.78 TO APR. 1
CONNECT TO EX. STORM SEWER

C.B. 3
N 180435.66
E 627040.81
CONSTRUCT STRUCTURE TYPE 1
F&I CASTING TYPE A
T/C EL. = 1220.75
GRATE EL. = 1220.25
INL. EL. = 1217.50 FROM APR. 2
OUTL. EL. = 1217.50 TO C.B. 2
CONNECT TO EX. STORM SEWER

C.B. 4(INPL)
N 180595.50
E 627127.27
INL. EL. = 1217.17 FROM C.B. 1
INPL. OUTL. EL. = 1217.07

APR. 1
N 180470.95
E 626975.20
SALVAGE AND INSTALL 15" APRON
EL. 1216.18
F&I 27 L.F. 15" CL. 5 R.C.P.
ST. S. @ 1.78%

APR. 2
N 180416.77
E 627074.92
SALVAGE AND INSTALL 15" APRON
EL. = 1218.19
F&I 33 L.F. 15" CL. 5 R.C.P.
ST. S. @ 1.78%

NOTE: ALL COORDINATES GIVEN TO CENTER OF CASTING OR END OF APRON.

BORING # 2	Intersection of E Circle Dr and Rocky Creek Dr NE SW quadrant at signal base site
0 – 5'	Soil
5' – 6'	Weathered Limestone
	Limestone Refusal at 6'
	END BORING

BORING # 1	Intersection of E Circle Dr and Rocky Creek Dr NE SE quadrant - bored 3' northwest of signal base site
0 – 5'	Soil
5' – 6'	Weathered Limestone
	Limestone Refusal at 6'
	END BORING

CASTING SCHEDULE	
TYPE	COVER/GRATE *
D	NEENAH R-3510 W/TYPE C GRATE

* CONTRACTOR TO FURNISH & INSTALL A FRAME WITH ALL GRATES/COVERS. THE CONTRACTOR SHALL BE ALLOWED TO SUBSTITUTE AN APPROVED EQUAL FOR ANY OF THE CASTING ASSEMBLIES.

0 10 20 40
SCALE IN FEET

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TWIN CITY AREA 454-0002
MN. TOLL FREE 1-800-252-1166

UTILITY TABULATION TABLE				
UTILITY	REMARKS			REMARKS
	NO IMPACT	WORK AROUND	REMOVE/RELOCATE	
CABLE TV		X		
GAS		X		
POWER (RPU)		X		
SANITARY/STORM		X		
TELEPHONE/FIBER		X		
WATER		X		

Revision comment: –
Revised: –

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Russell J. Klein Date: 3-29-12 Reg. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-4450
FAX: (507) 328-3401

Title: GRADING AND UNDERGROUND FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

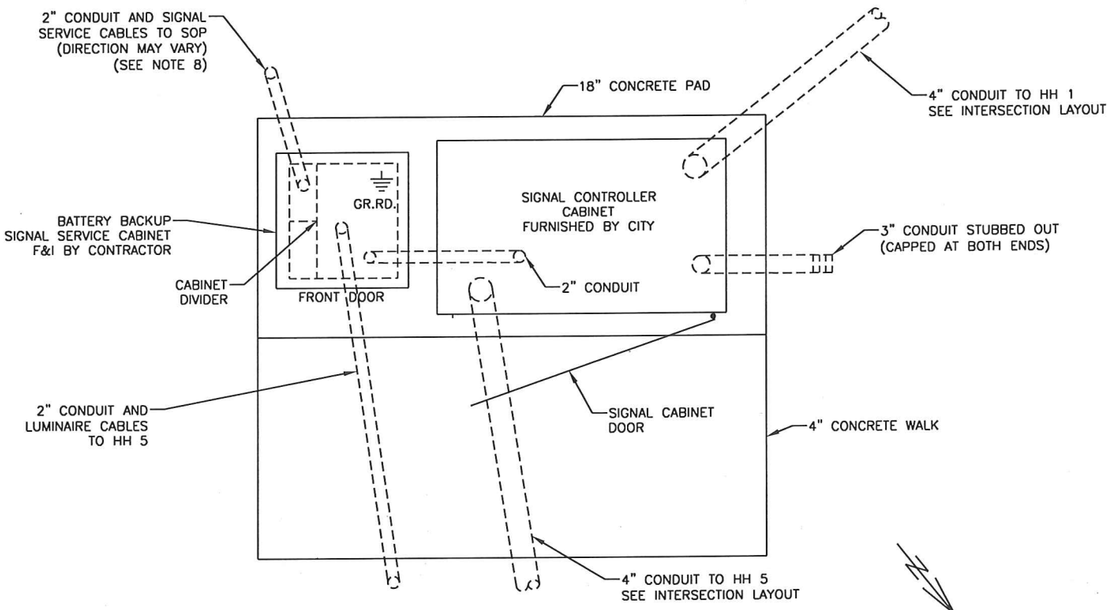
Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 3 of 10 Sheets

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

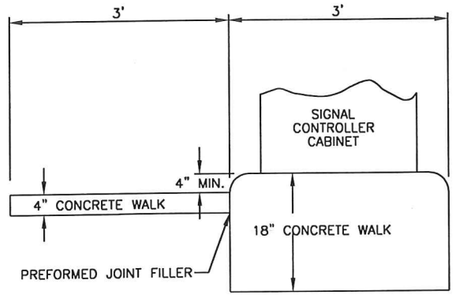
PLAN VIEW



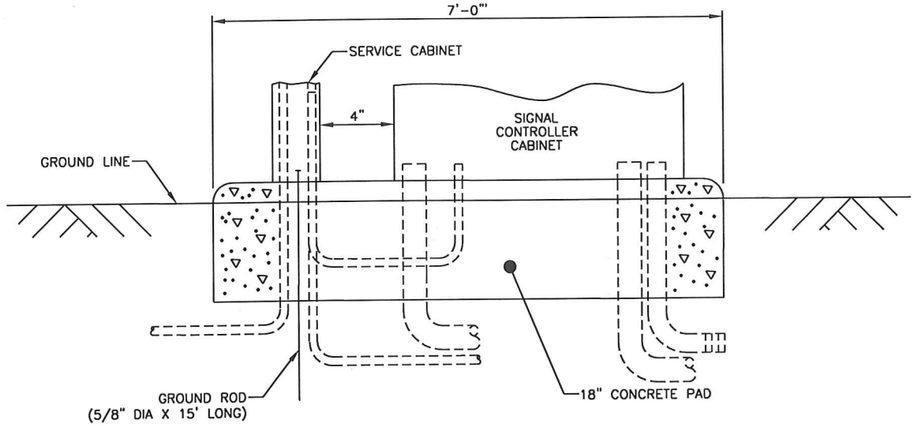
NOTES:

1. THE ANCHOR RODS, NUTS, AND WASHERS FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY THE CITY.
2. THE UPPER PART OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. PLACEMENT OF THIS CONDUIT IN PROPER LOCATION IS CRITICAL.

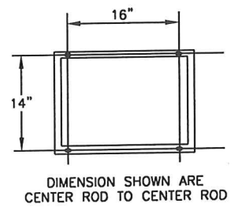
SIDE VIEW



FRONT VIEW

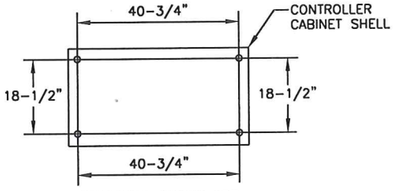


B.B. SERVICE CABINET BOLT PATTERN



DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

Revision comment: —
Revised: —

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Russell J. Klus Date: 3-29-12 Reg. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: DETAILS FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 4 of 10 Sheets

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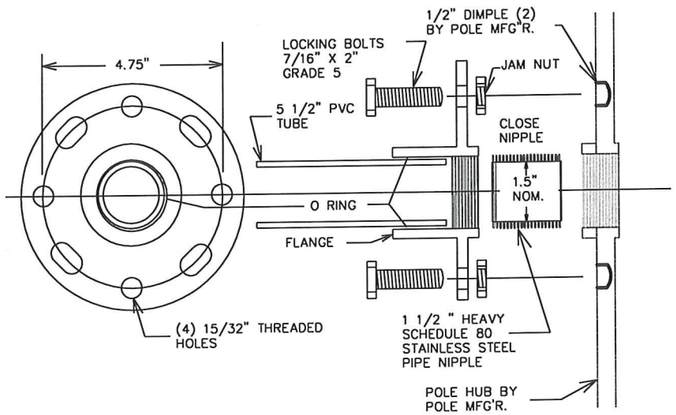
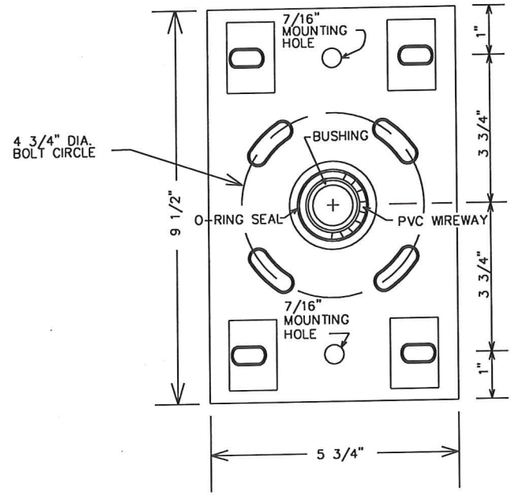
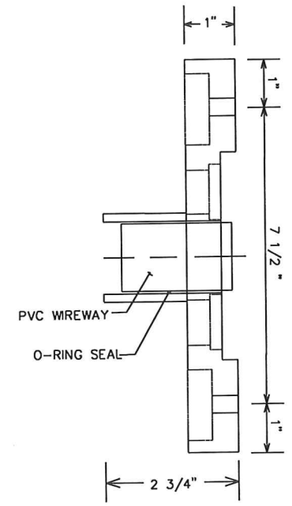


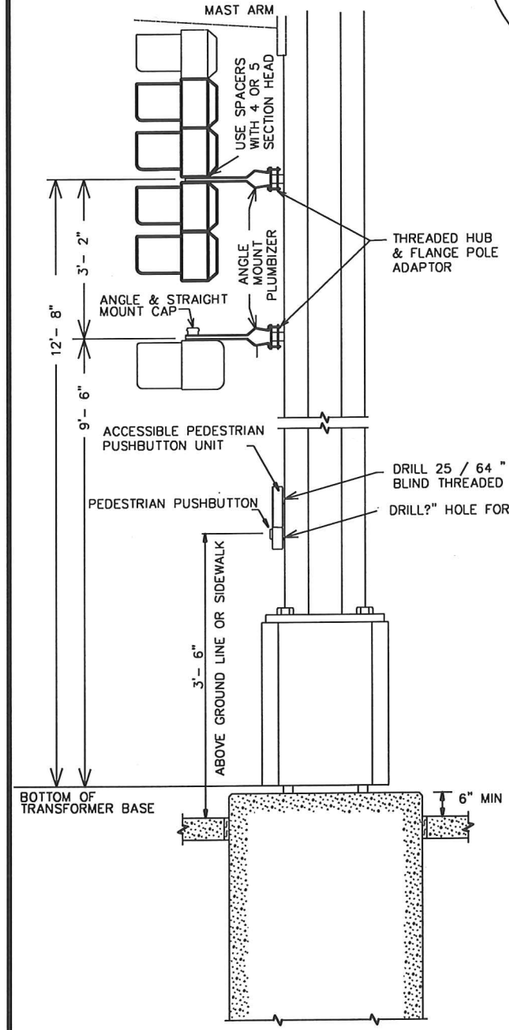
THREADED HUB AND FLANGE POLE ADAPTOR



BOLT ON HUB & FLANGE

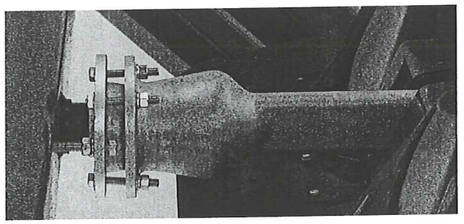


SIDE VIEW



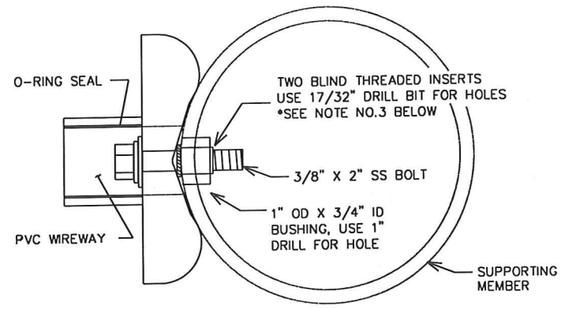
TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

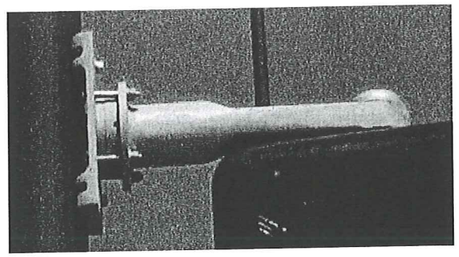


NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS.

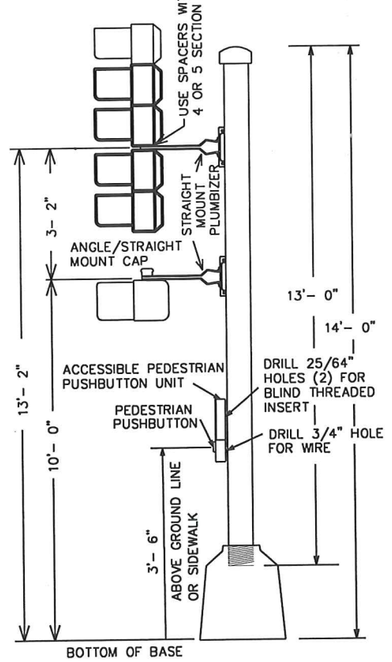


TOP VIEW



NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. BLIND THREADED INSERTS MUST BE INSTALLED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.
5. SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

Revision comment: —
Revised: —

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City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
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Phone: (507) 328-2450
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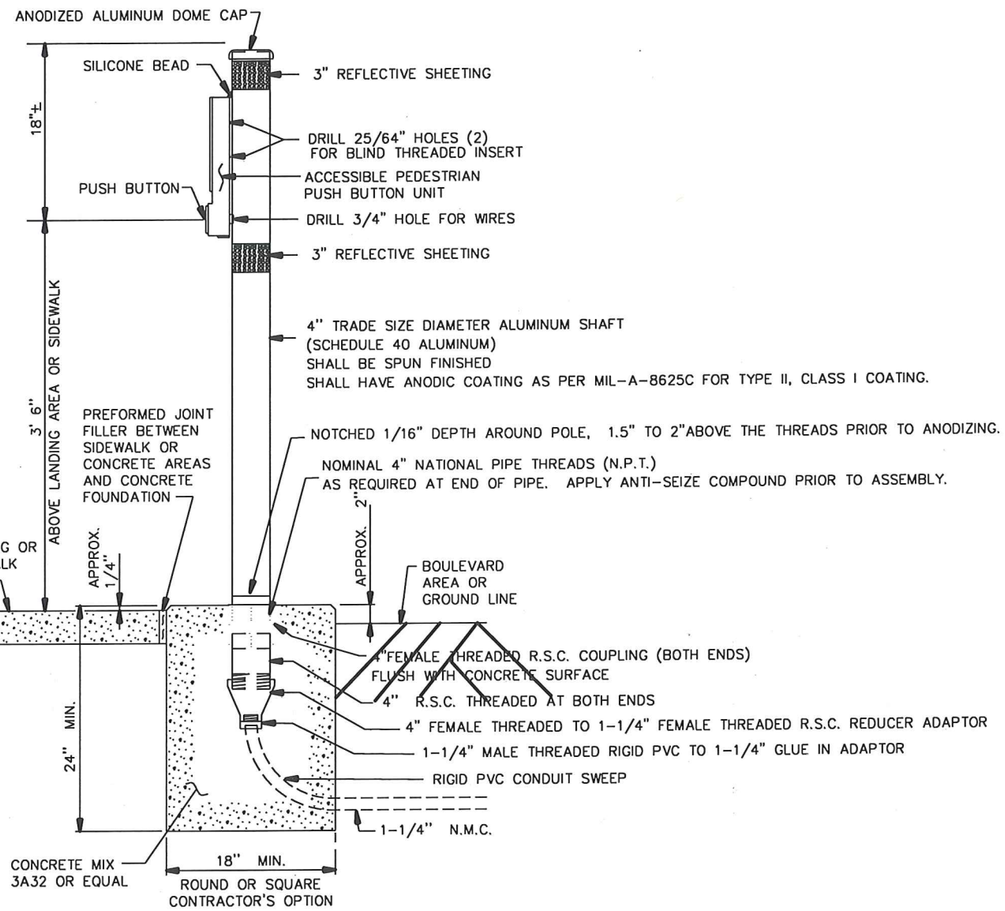
Title: DETAILS FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

Designer: GWF Checker: RJK

S.A.P. No. 159-020-015 55-622-17
Project No. M8-30 J6010
Sheet 5 of 10 Sheets

PEDESTRIAN PUSH BUTTON STATION



NOTES:

1. PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. THE BUTTON ARROW DIRECTION MUST POINT TO THE DIRECTION OF THE APPROPRIATE CROSSING. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.

2. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSTALLED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.

3. BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 – 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST.

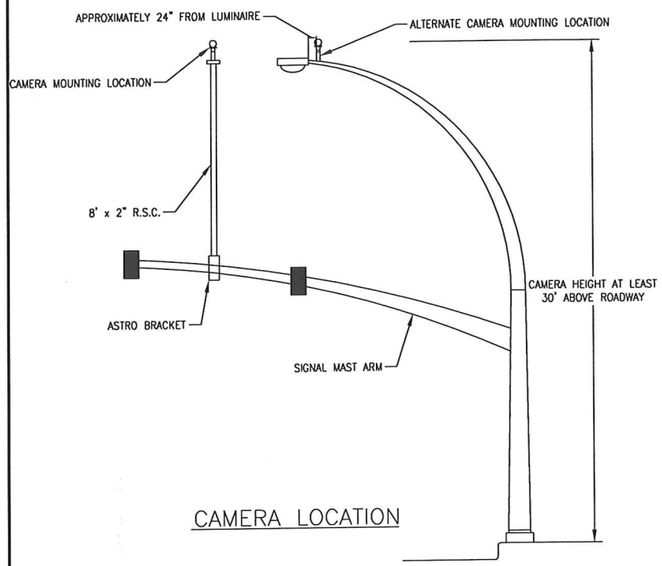
4. MOUNTING BOLTS SHALL BE 1/4 – 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.

5. APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.

6. THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED SIGN SHEETING.

7. ANTI-SEIZE COMPOUND MUST BE USED ON THE MOUNTING BOLTS WHEN THE PEDESTRIAN SIGN IS INSTALLED.

ACCESSIBLE PEDESTRIAN SIGNAL (APS)
PEDESTRIAN PUSH BUTTON STATION



CAMERA LOCATION

NOTES:

ALL CAMERA DETECTION DEVICES WILL BE FURNISHED BY THE CITY OF ROCHESTER TRAFFIC DEPARTMENT. THE CONTRACTOR IS REQUIRED TO PROVIDE WIRE AND INSTALL CAMERAS ON LUMINAIRE EXT. OR MAST ARM ACCORDING TO SIGNAL LAYOUT AND FIELD ENGINEERS DIRECTION.

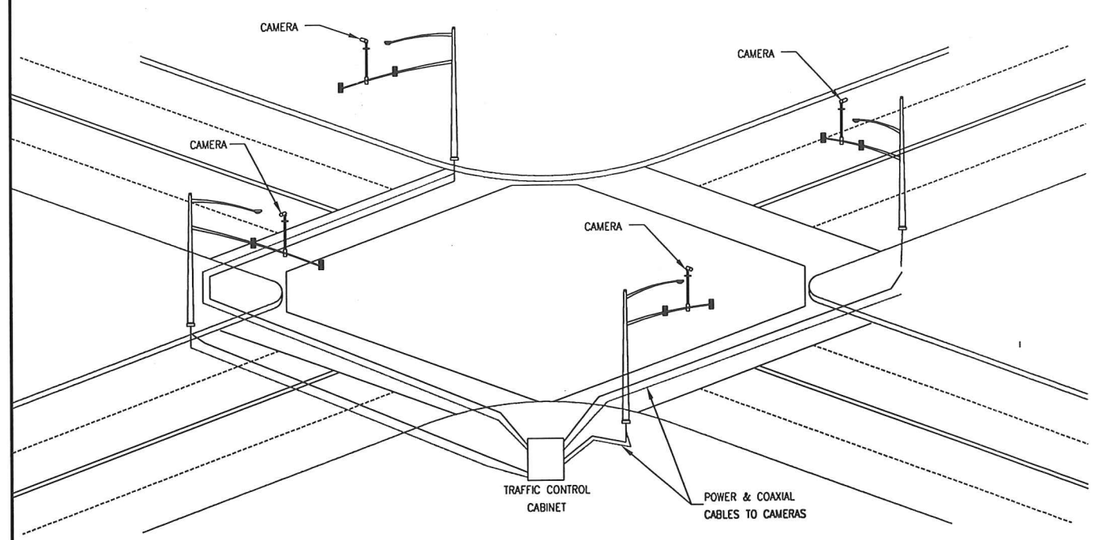
THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL BRACKETING AND HARDWARE REQUIRED TO MOUNT CAMERAS.

RUN ONE CONTINUOUS PULL (WITHOUT SPLICES) OF COAXIAL CABLE AND POWER CABLE BETWEEN THE CAMERA MOUNTING LOCATION AND THE TRAFFIC CONTROL CABINET, UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE CABLES NEED TO MEET THE FOLLOWING SPECIFICATION:

- BELDEN 8281 COAXIAL CABLE
- THREE-CONDUCTOR, 16AWG POWER CABLE

CAMERA CABLE AND 5½ PR CABLE SHALL BE SPLICED IN EACH SIGNAL BASE WITH EACH WIRE BEING A TWISTED OVERLAP, SOLDERED INDIVIDUALLY INSULATED AND THE ENTIRE SPLICE HEAT SHRINK JACKETED.

TYPICAL INTERSECTION LAYOUT USING CAMERAS



Revision comment: –
Revised: –

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City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
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Title: DETAILS FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 6 of 10 Sheets

NOTES:
1) EVP DETECTORS AND CONFIRMATORY LIGHTS, VIDEO DETECTOR CAMERAS, LUMINAIRES, AND APS PUSH BUTTONS AND R10-4B SIGNS SHALL BE PROVIDED BY THE CITY.
2) SEE DIVISION SS FOR BRACKETING REQUIREMENTS.
3) THE CONTRACTOR SHALL INSTALL NON-METERED ELECTRICAL EQUIPMENT AND SIGNAL CABINET - FURNISHED BY THE CITY - AND SHALL MAKE ALL FIELD CONNECTIONS TO MAKE THE SIGNAL SYSTEM OPERATIONAL.
4) THE EXACT LOCATION OF HANDHOLES, POLES, AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY TRAFFIC PERSONNEL.
5) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
6) FOR SIGN TYPE "D", SEE MAST ARM SIGNING DETAILS.
7) FOR PAVEMENT MARKINGS SEE CONSTRUCTION LAYOUT.
8) EVP DETECTION & CONFIRMATORY LIGHTS SHALL BE MOUNTED 6' FROM END OF THE MAST ARM. A 1-3/C #20 CABLE SHALL BE WIRED DIRECT TO THE EVP DETECTOR - CONTINUOUS WITHOUT SPLICES FROM THE CABINET. 2-1/C #14 SHALL BE WIRED FROM THE CONFIRMATORY LIGHT TO THE TERMINAL BLOCK IN EACH POLE BASE.
9) POLE STANDARDS, LUMINAIRE EXTENSIONS AND MAST ARMS SHALL BE GALVANIZED AND NOT PAINTED.
10) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
11) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
12) ALL NEW CONDUIT SHALL BE NMC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1-1/C #6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.

SIGNAL SYSTEM OPERATIONS
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE.
- PHASES 1 & 5 SHALL BE PROTECTED LEFT TURNS
- MIN RECALL WITH PHASES 2 & 6.

INSTALL VIDEO DETECTORS (FURNISHED BY CITY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	8' POLE EXTENSION AND ASTRO BRACKET	CAMERA MOUNTED AT	MOUNTING HEIGHT
1	EB EAST CIRCLE DR NE	POLE 1	YES	ON MAST ARM	28'
2	SB STONEHEDGE DR NE	POLE 2	YES	ON MAST ARM	28'
3	WB EAST CIRCLE DR NE	POLE 3	YES	ON MAST ARM	28'
4	NB ROCKY CREEK DR NE	POLE 4	YES	ON MAST ARM	28'

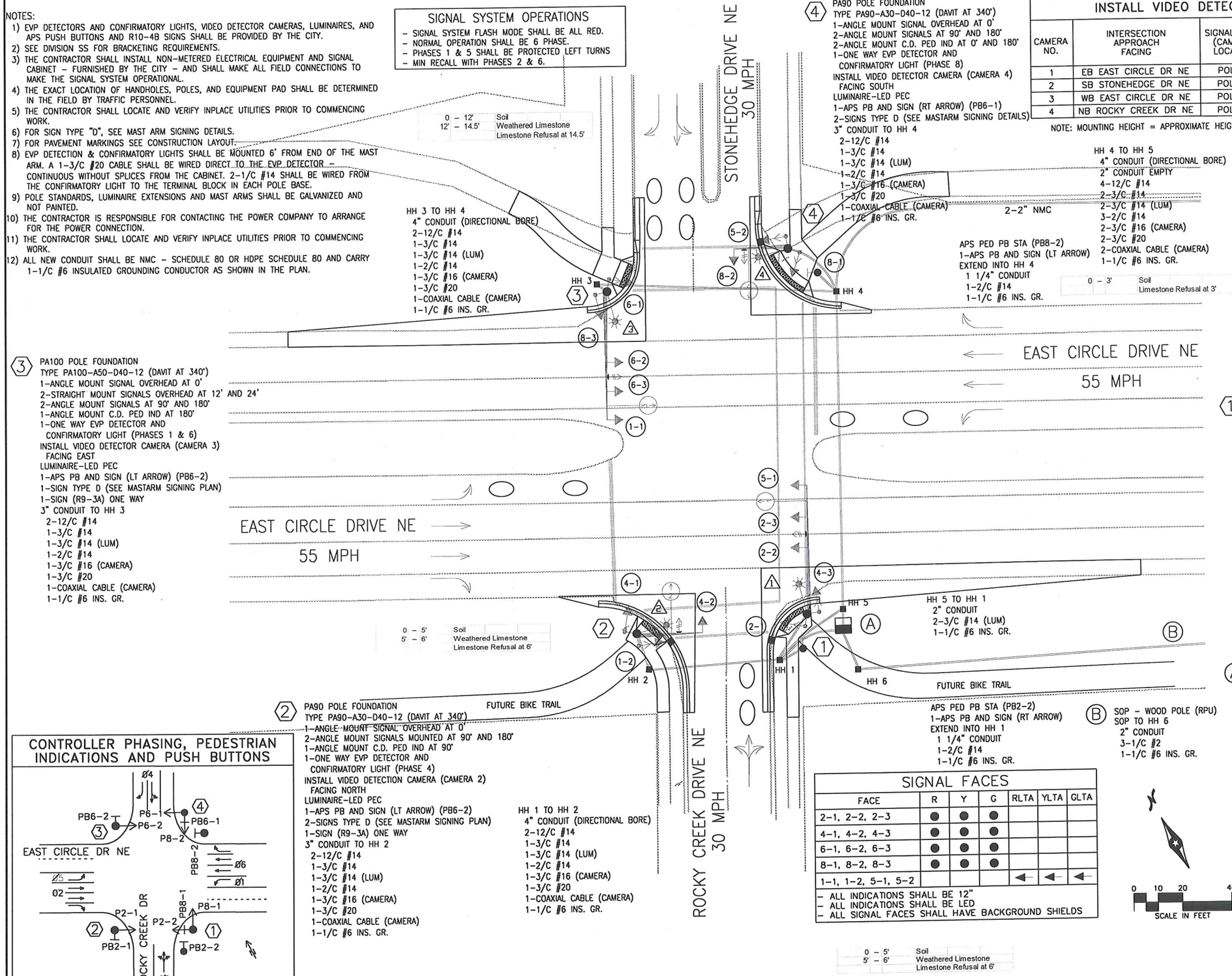
NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

VIDEO DETECTION

CAMERA NUMBER	DETECTION PHASES	DETECTION LOCATION
1	2	475'
	5	10' AND 40'
2	4	5', 20', AND 120'
3	1	10' AND 40'
	6	475'
4	8	5', 20', AND 120'

NOTE: ALL DETECTOR FUNCTIONS VIA CONTROLLER

⬭ = DETECTION AREA



4 PA90 POLE FOUNDATION
TYPE PA90-A30-D40-12 (DAVIT AT 340')
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90' AND 180'
2-ANGLE MOUNT C.D. PED IND AT 0' AND 180'
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 4) FACING SOUTH
LUMINAIRE-LED PEC
1-APS PB AND SIGN (RT ARROW) (PB6-1)
2-SIGNS TYPE D (SEE MASTARM SIGNING DETAILS)
3" CONDUIT TO HH 4
2-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

HH 3 TO HH 4
4" CONDUIT (DIRECTIONAL BORE)
2-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

HH 4 TO HH 5
4" CONDUIT (DIRECTIONAL BORE)
2" CONDUIT EMPTY
4-12/C #14
2-3/C #14
2-3/C #14 (LUM)
3-2/C #14
2-3/C #16 (CAMERA)
2-3/C #20
2-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

APS PED PB STA (PB8-2)
1-APS PB AND SIGN (LT ARROW)
EXTEND INTO HH 4
1 1/4" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

3 PA100 POLE FOUNDATION
TYPE PA100-A50-D40-12 (DAVIT AT 340')
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
2-ANGLE MOUNT SIGNALS AT 90' AND 180'
1-ANGLE MOUNT C.D. PED IND AT 180'
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1 & 6)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 3) FACING EAST
LUMINAIRE-LED PEC
1-APS PB AND SIGN (LT ARROW) (PB6-2)
1-SIGN TYPE D (SEE MASTARM SIGNING PLAN)
1-SIGN (R9-3A) ONE WAY
3" CONDUIT TO HH 3
2-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

1 PA100 POLE FOUNDATION
TYPE PA100-A50-D40-12 (DAVIT AT 340')
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
2-ANGLE MOUNT SIGNALS AT 90' AND 180'
2-ANGLE MOUNT C.D. PED IND AT 90' AND 180'
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 1) FACING WEST
LUMINAIRE-LED PEC
1-APS PB AND SIGN (LT ARROW) (PB8-1)
1-SIGN TYPE D (SEE MASTARM SIGNING PLAN)
3" CONDUIT TO HH 1
2-12/C #14
2-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

2 PA90 POLE FOUNDATION
TYPE PA90-A30-D40-12 (DAVIT AT 340')
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS MOUNTED AT 90' AND 180'
1-ANGLE MOUNT C.D. PED IND AT 90'
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
INSTALL VIDEO DETECTION CAMERA (CAMERA 2) FACING NORTH
LUMINAIRE-LED PEC
1-APS PB AND SIGN (LT ARROW) (PB6-2)
2-SIGNS TYPE D (SEE MASTARM SIGNING PLAN)
1-SIGN (R9-3A) ONE WAY
3" CONDUIT TO HH 2
2-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

HH 1 TO HH 2
4" CONDUIT (DIRECTIONAL BORE)
2-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-2/C #14
1-3/C #16 (CAMERA)
1-3/C #20
1-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

HH 5 TO HH 1
2" CONDUIT
2-3/C #14 (LUM)
1-1/C #6 INS. GR.

APS PED PB STA (PB2-2)
1-APS PB AND SIGN (RT ARROW)
EXTEND INTO HH 1
1 1/4" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

B SOP - WOOD POLE (RPU)
SOP TO HH 6
2" CONDUIT
3-1/C #2
1-1/C #6 INS. GR.

A EQUIPMENT PAD - SEE DETAILS
CONTROLLER AND CABINET (FUNISHED BY CITY)
SERVICE CABINET - SEE DETAIL
3" CONDUIT STUB OUT FOR FUTURE USE (CAP BOTH ENDS)

CONTROL CABINET TO HH 1
4" CONDUIT
4-12/C #14
2-3/C #14
3-2/C #14
2-3/C #16 (CAMERA)
2-3/C #20
2-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

CONTROL CABINET TO HH 5
4" CONDUIT
4-12/C #14
2-3/C #14
3-2/C #14
2-3/C #16 (CAMERA)
2-3/C #20
2-COAXIAL CABLE (CAMERA)
1-1/C #6 INS. GR.

SERVICE CABINET TO CONTROL CABINET
2" CONDUIT
2-1/C #6
1-1/C #6 INS. GR.

SERVICE CABINET TO HH 5
2" CONDUIT
4-3/C #14 (LUM.)
1-1/C #6 INS. GR.

SERVICE CABINET TO HH 6
2" CONDUIT
3-1/C #2
1-1/C #6 INS. GR.

SIGNAL FACES

FACE	R	Y	G	RLTA	YLTA	GLTA
2-1, 2-2, 2-3	●	●	●			
4-1, 4-2, 4-3	●	●	●			
6-1, 6-2, 6-3	●	●	●			
8-1, 8-2, 8-3	●	●	●			
1-1, 1-2, 5-1, 5-2				←	←	←

- ALL INDICATIONS SHALL BE 12"
- ALL INDICATIONS SHALL BE LED
- ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

Revision comment: -
Revised: -

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Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 7 of 10 Sheets

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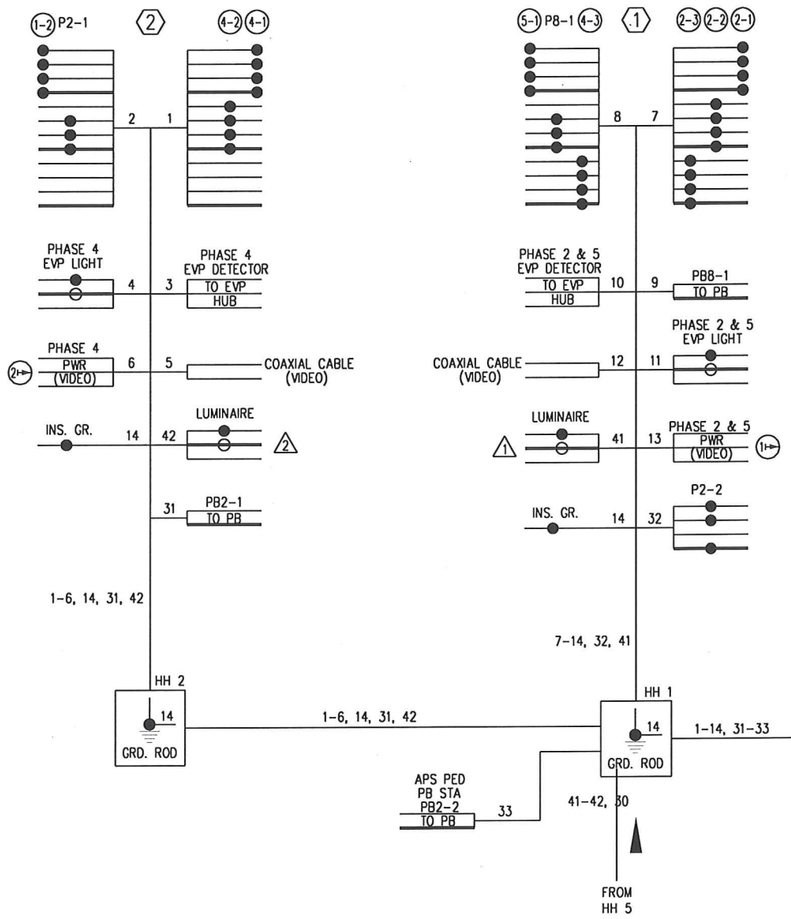

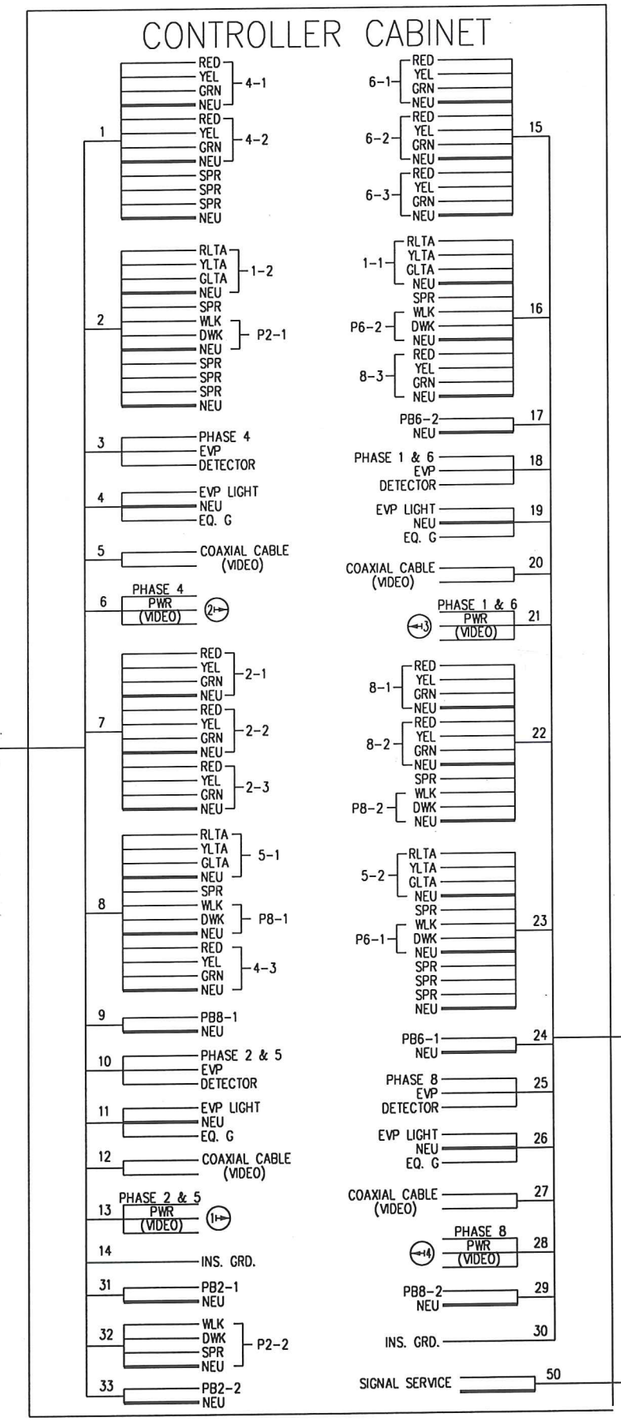

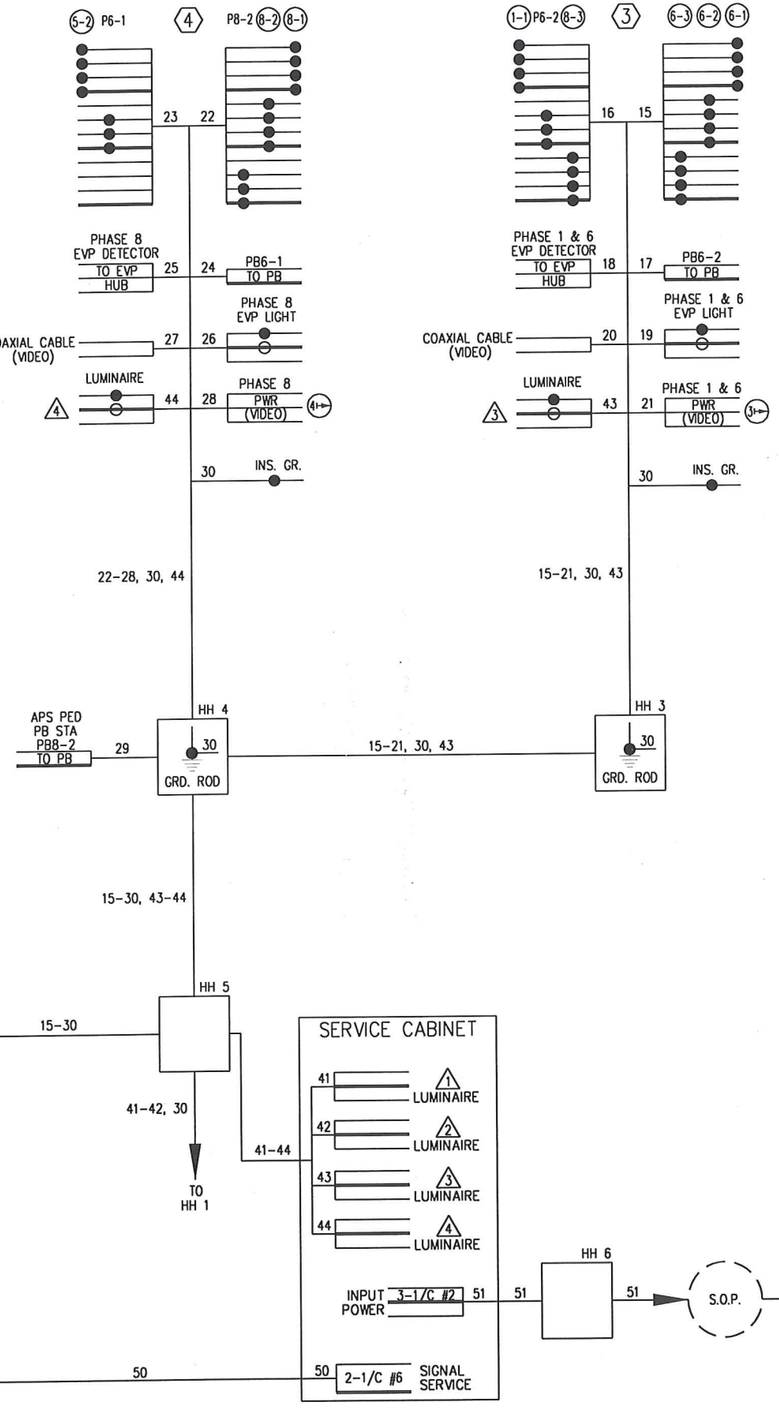

NOTES:
1. SIGNAL SYSTEM AND LUMINAIRES ARE UNMETERED.

CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET			TO DEVICE		
1/C#6 G					
6PR#19					
3-1/C#2 R, WH, BLK	INPUT POWER	6/C#14 BLK, WH, R, BLK/R, O, BL	6/C#14 CABLE BLK, WH, R, BLK/R, O, BL	RED, YEL, GRN, NEU, YLTA, GLTA	4 & 5 SECTION SIGNAL INDICATION
3-1/C#6 BLK, WH, G	SIGNAL SERVICE				
12/C#14 R, O, BL, W, R/BLK, O/BLK, BL/BLK, W/BLK, RLK, BLK/W, BLK/R, W/RD		4/C#14 BLK, WH, R, BLK/R	4/C#14 CABLE BLK, WH, R, BLK/R	RED/DWK, YEL/WLK, GRN/SPR, NEU	3 SECTION & PED INDICATION
		3/C#14 BLK, WH, G	3/C#14 CABLE BLK, WH, G	EVP LIGHT LUM/FLASHER	
		2/C#14 BLK, WH OR CLR			
		3/C#20 R OR O, WH OR YEL, BLK OR BL	2/C#14 CABLE BLK, WH OR CLR	PED PUSH BUTTON (If Required)	

BASE OF POLE OR PEDESTAL

NOTE:
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

Revision comment: —
Revised: —

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Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 8 of 10 Sheets

MAST ARM MOUNTED SIGNS								
SIGN PANEL	SIGNAL SYSTEM	POLE NO.	A (FEET)	SIZE (INCHES)	MOUNTING BRACKET		AREA/ SIGN (SQ. FT.)	NO. REQ.
					NUMBER	① SPACING (IN.)		
D-1		2	7	42 X 54	2	30	15.75	1
		4	7	42 X 54	2	30	15.75	1
D-2		2	15	132 X 24	5	30	22	1
		4	15	132 X 24	5	30	22	1
D-3		3	33	156 X 36	5	36	39	1
D-4		1	33	156 X 36	5	36	39	1

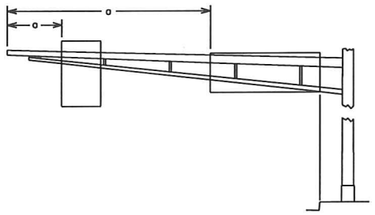
SPECIFIC NOTES:

① SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 8/22/05) FOR BRACKET SPACING REQUIREMENTS.

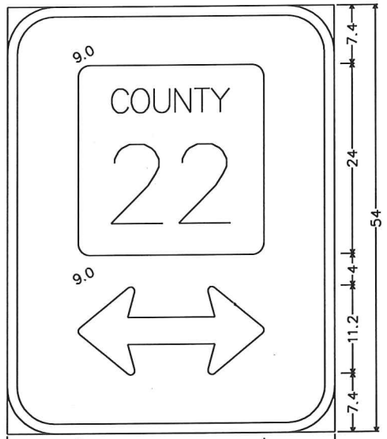
GENERAL NOTES:

1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE "D" STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL TO THE SIGNAL SYSTEM PAY ITEM.

MAST ARM SIGN LOCATION

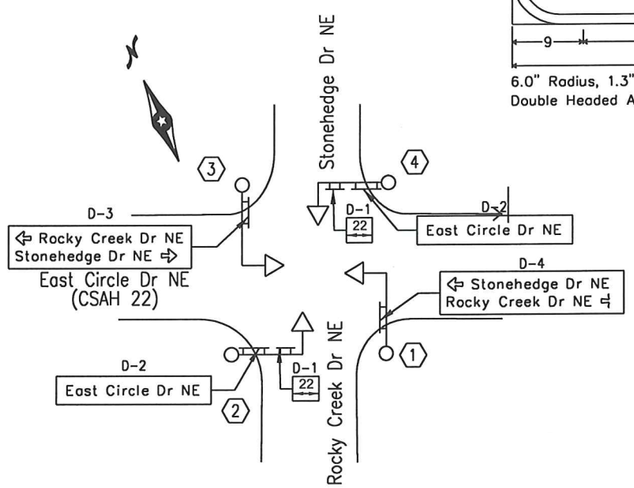


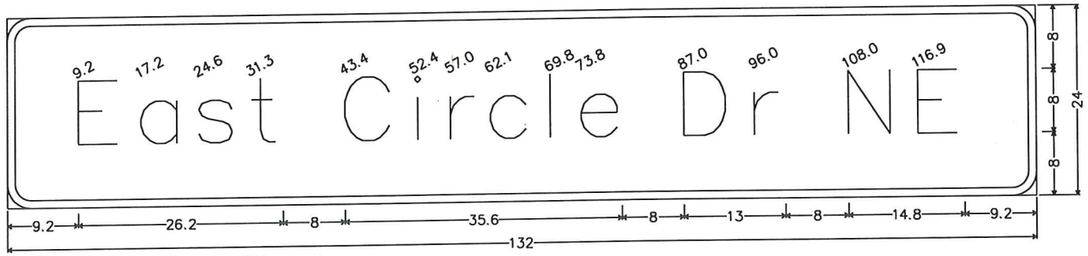
OVERLAYS				
CODE NO.	QTY	SIZE (IN)	LEGEND	SQ. FT. PER OVERLAY
M1-X4a	2	24 X 24	22	4



6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 – 24.0" 0{;

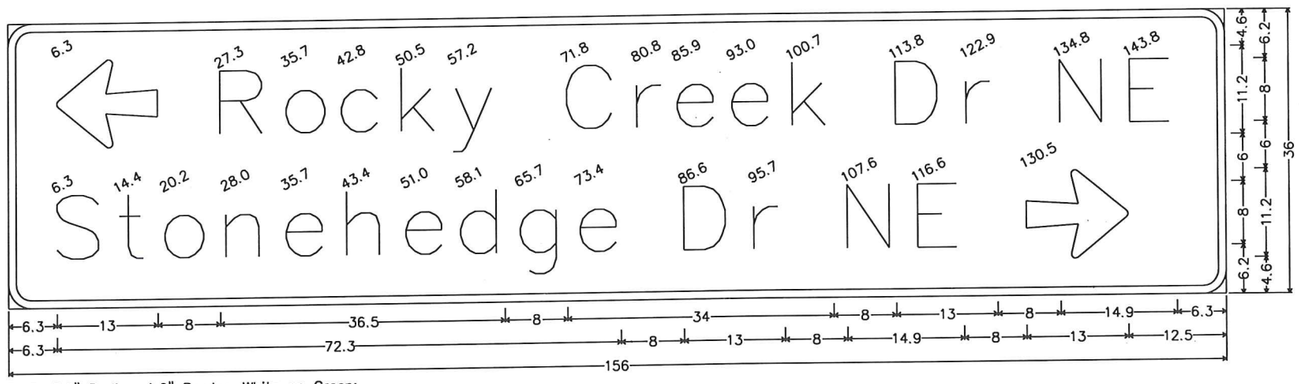
D-1





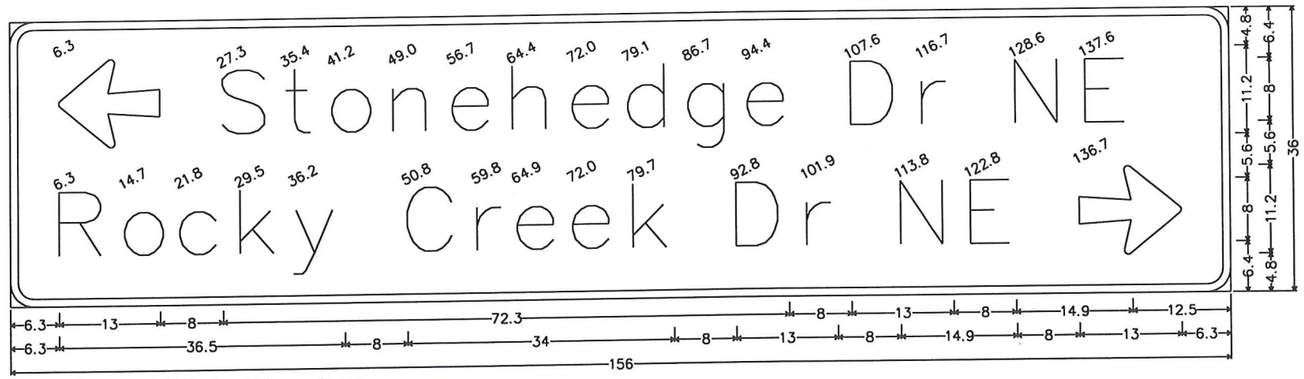
D-2; 3.0" Radius, 1.0" Border, White on Green;
[East Circle Dr NE] E Mod;

D-2



D-3; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 – 13.0" 180{; [Rocky Creek Dr NE] E Mod; [Stonehedge Dr NE] E Mod; Arrow 5 – 13.0" 0{;

D-3



D-4; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 – 13.0" 180{; [Stonehedge Dr NE] E Mod; [Rocky Creek Dr NE] E Mod; Arrow 5 – 13.0" 0{;

D-4

Revision comment: —
Revised: —

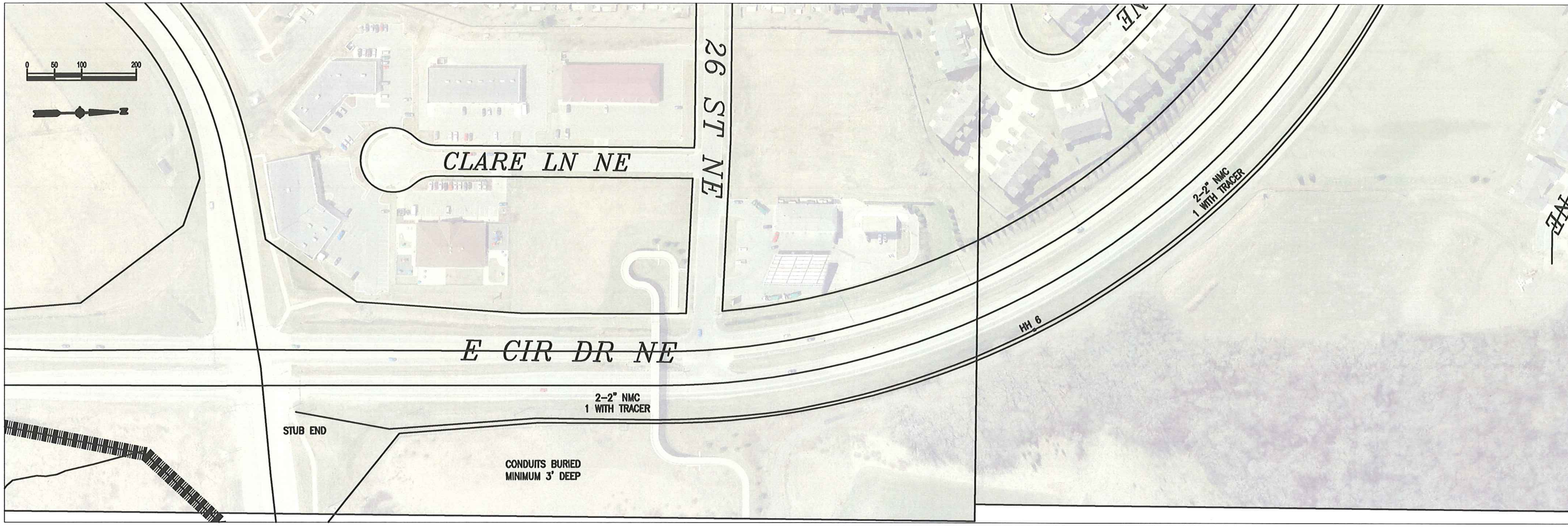
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Russell J. Klun Date: 3-29-12 Reg. No. 24667

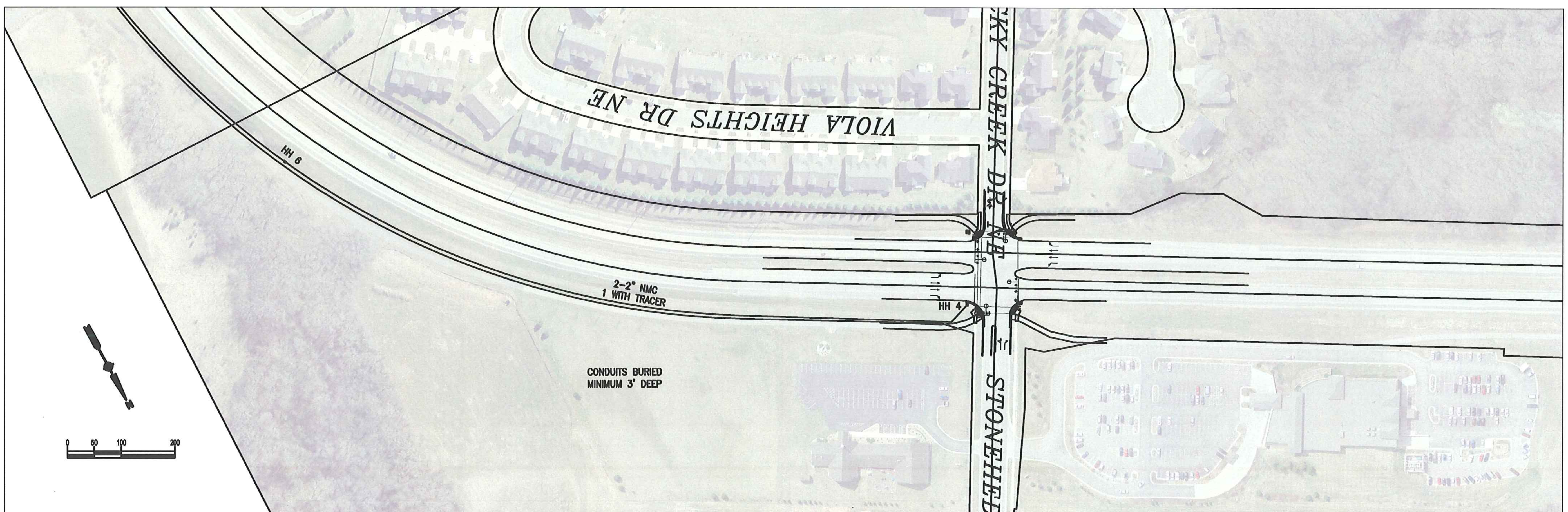
City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: SIGNING DETAILS FOR TRAFFIC SIGNAL AT E CIRCLE DR AND ROCKY CREEK DR NE / STONEHEDGE DR NE

Designer: CWF
Checker: RJK

S.A.P. No. 159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 9 of 10 Sheets





P:\PROJECTS\J-PROJ\J6010\Design\Dwgs\6010M10.dwg, Layout1, 3/29/2012 1:43:40 PM, 1:2

Revision comment: –

Revised: –

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Date: 3-29-12 Reg. No. 24667

City of Rochester, Minnesota
Department Of Public Works

201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: INTERCONNECT CONDUIT

S.A.P. No.159-020-015 55-622-47
Project No. M8-30 J6010
Sheet 10 of 10 Sheets

Designer: CWF
Checker: RJK